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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,121	03/09/2007	Torsten Harms	3926.221	4366
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EXAMINER				
KAMEN, NOAH P				
ART UNIT		PAPER NUMBER		
3747				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/556,121

**Applicant(s)**

HARMS ET AL.

**Examiner**

KATRINA B. HARRIS

**Art Unit**

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 15- 33** are rejected under 35 U.S.C. 102(b) as being anticipated by (EP 0385160A1).

(EP 0385160A1), as in **claim 15**, a balancing shaft (32) for an internal combustion engine, produced by the method of claim 21, balancing shaft (9) consisting of a tubular hollow body and having a balancing weight (10) arranged on the hollow body, the balancing weight, being arranged on the outer circumference of the hollow body and being connected to the latter in an interference fit, wherein the hollow body (9) is plastically expanded only at a location of its connection to the balancing weight (10) by an internal pressure inside the hollow body, and the balancing weight (10) is expanded at this location due to a contact with the hollow body and then elastically with elastic spring-back. (see figure 3)

Regarding **claim 16**, the balancing shaft (9) as claimed in claim 15, wherein the balancing weight (10) is integrally formed on a hub which locally encloses and is secured to the hollow body (9).

Regarding **claim 17**, the balancing shaft (9) as claimed in claim 15, wherein the functional elements are arranged as individual components on the hollow body (9) and are connected to the hollow body (9) in an interference fit.

Regarding **claim 18**, the balancing shaft as claimed in claim 15, wherein the balancing weight (10) and/or the functional elements are additionally connected to the hollow body (9) in a positive- locking manner.

Regarding **claim 19**, the balancing shaft as claimed in claim 15, wherein the hollow body (9) is connected at one end in one piece with a connecting component for drive components, the connecting part closing the hollow body (9).

Regarding **claim 20**, the balancing shaft as claimed in claim 19, wherein said drive components are selected from chain wheels and centrifuges.

Regarding **claim 21**, a method of producing a balancing shaft, a balancing weight and also functional elements being fastened to a hollow tubular body, the balancing weight being positioned on and fastened to the outer circumference of the hollow tubular body with formation of an interference fit, comprising:  
introducing a balancing weight (10) and/or of the functional element onto hollow body (9), partially expanding the hollow body (9) by means of fluidic internal high pressure locally only at the location of the introduced weight and/or of the functional element to form the interference fit while expanding the balancing weight (10) and/or the functional elements so as to spring back elastically.

Regarding **claim 22**, the method as claimed in claim 21, wherein, by means of a hub on which the balancing weight (10) is integrally formed, said balancing weight (10) is pushed onto the hollow body (9) and is then fastened.

Regarding **claim 23**, the method as claimed in claim 21, wherein the functional elements, with a bore, are pushed as individual components onto the hollow body (9) and are connected to the latter, with an interference fit being formed.

Regarding **claim 24**, the method as claimed in claim 21, wherein the wall of the through-opening of the hub and/or the wall of the bore with which the balancing weight (10) and/or the functional elements are pushed onto the hollow body (9) are/is designed to be rotationally asymmetric, and in that, by means of fluidic internal high pressure, the hollow body (9) is connected to the balancing weight (10) and/or the functional elements in a positive-locking manner by at least partial contact with rotationally asymmetric surfaces of the wall of the through- opening of the hub and/or of the wall of the bore

Regarding **claim 25**, the method as claimed in claim 21, wherein at least one of the open ends of the hollow body (9) is friction welded to a connecting component closing the end and intended for drive components.

Regarding **claim 26**, the method as claimed in claim 25, wherein said drive components are selected from chain wheels and centrifuges.

Regarding **claim 27**, the balancing shaft as claimed in claim 18, wherein the positive-locking is achieved by an asymmetric structure on an inner wall of a hub of the balancing weight and/or a bore of the functional elements.

Regarding **claim 28**, the balancing share as claimed in claim 18, wherein the asymmetric structure includes an oval and/or hollows or longitudinal grooves formed on the wall.

Regarding **claim 29**, the method as claimed in claim 21, wherein the internal high pressure is applied by broaching.

Regarding **claim 30**, the method as claimed in claim 21, wherein the internal high pressure is applied by fluidic internal high pressure.

Regarding **claim 31**, the method as claimed in claim 21, wherein the partial expansion of the hollow body (9) by the internal high pressure locally only at the location of the balancing weight is achieved by an internal high pressure forming die that has a negative contour of the balancing shaft outside the location of the balancing weight.

Regarding **claim 32**, the method as claimed in claim 21, wherein the partial expansion of the hollow body (9) by the internal high pressure locally only at the location of the balancing weight is achieved by movable plungers to be inserted into the hollow body.

Regarding **claim 33**, the method as claimed in claim 21, wherein the partial expansion of the hollow body (9) by the internal high pressure locally only at the location of the balancing weight is achieved by an expansion lance to be inserted into the hollow body.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,237,442 issued to Killion is a similar system. U.S. Patent No. 6,682,437 issued to Killion et al. is a similar system. U.S. Patent No. 5,857,388 issued to Killion et al. is a similar system. U.S. Patent No. 5,791,309 issued

to Yamazaki et al. is a similar system. U.S. Patent No. 5,483,932 issued to Friedman et al. is a similar system. U.S. Patent No. 6,626,063 issued to Killion is a similar system.

### ***Response to Arguments***

Applicant's arguments with respect to claim 15-26 have been considered but are moot in view of the new ground(s) of rejection.

### ***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATRINA B. HARRIS whose telephone number is (571)272-4842. The examiner can normally be reached on 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Katrina B. Harris  
Examiner  
Art Unit 3747

KBH

/Stephen K. Cronin/  
Supervisory Patent Examiner, Art Unit 3747